

# George Eliot's Microscope

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*This article explores the links between the nineteenth century microscope and George Eliot's realist fiction. Focusing on Middlemarch, the article explores the ways in which the techniques of the microscopist mirror those of the realist author: engaging with larger object by magnifying the minutiae of its parts. By directly comparing workings of Dr Lydgate's microscope with the way the narrator of Middlemarch uses free indirect discourse to inhabit and explain characters' innermost thoughts, the article will demonstrate how the unique capabilities of the microscope – its ability to open up alternative ways of seeing – act as a metaphor for both the limits and possibilities of realism.*

## 1: A 'STUDY OF PROVINCIAL LIFE' – THE FICTION WRITER AS MICROSCOPIST

In an 1855 review of Charles Kingsley's *Westward Ho!* George Eliot wrote that the 'medium' of the writer's sensibility acts as a 'delicate acoustic or optical instrument, bringing home to our courser senses what would otherwise be unperceived by us'.<sup>1</sup> Indeed, metaphors involving 'optical instruments' such as the microscope abound in both her fiction and journalistic work. With this in mind, it is reasonable to suspect that Eliot had some familiarity with the workings of the microscope – which, by the mid-nineteenth century, was ubiquitous amongst both professionals and hobbyists – and that likely owned one like the one shown in figure 1. Indeed, biographical evidence proves this to be the case, as, recalling the early days of his relationship with Eliot, her partner, G. H. Lewes, wrote, 'we were very poor, living in one room, where I had my little table with my microscope making my observations, and my wife another close at hand where she wrote'.<sup>2</sup> Lewis was so enamoured with the newly improved and accessible contraption and its seemingly miraculous revelations that he urged his readers to buy one because 'few purchases will yield you so much pleasure'.<sup>3</sup> To find evidence for Eliot's own enthusiasm for the contraption one need only look to her fiction.

<sup>1</sup> George Eliot, 'Westminster Review 64' (July 1855), pp. 288–296, in Thomas Pinney, *The Essays of George Eliot* (New York: Columbia Univ. Press, 1963), 123–36, p. 126.

<sup>2</sup> Gordon Sherman Haight, *George Eliot: A Biography* (Clarendon Press, 1969), p. 218.

<sup>3</sup> Mary Wilson Carpenter, *Health, Medicine, and Society in Victorian England* (Praeger, 2010), p. 10.

Eliot's narrator in *Middlemarch* is one of the most prominent and memorable features of the novel: she interrupts the flow of story at intervals, speaking directly to the reader, and introduces and concludes each narrative episode with characteristic erudition. Thus, although the narrator does not act within the novel and so is not, as such, a 'character', the authorial voice is powerfully present within the text. However, rather than conforming to traditional realism, wherein the narrator creates the impression of transcribing observed reality, Eliot's narrators – especially in her later work – ruminate on the very nature of the realist mode. Indeed, Eliot's fiction begins to engage with the methods of realism as early as 1860 in *The Mill on the Floss*, where the narrator prefigures *Middlemarch*'s hermeneutic of the microscope by saying, 'we need not shrink from this comparison of small things with great; for does not science tell us that its highest striving is after the ascertainment of a unity which shall bind the smallest things with the greatest?'<sup>4</sup> Here, the narrator is advocating the methodologies of science in the observation of the Dodsons and the Tullivers – two provincial families related by locality and blood but who have opposing 'theories of life'. The families are interesting to the narrator not simple because of the role they might play in the unfolding plot, but as a sort of anthropological study into the intricacies and foibles of provincial mores and opinions, which might, in turn, convey a little of what it was like to live in 1820's rural England. The narrator seems to be defending the pursuit of 'petty' domestic realist fiction on the basis that, '[i]n natural science [...] there is nothing petty to the mind that has a large vision of relations, and to which every single object suggests a vast sum of conditions. It is surely the same with the observation of human life'.<sup>5</sup>

It is fitting then that in her later work, *Middlemarch*, Eliot chooses the form of a multiplot novel 'to give a panoramic view of provincial life'.<sup>6</sup> However, despite the sweeping, inclusive and all-encompassing nature of what Henry James felt to be a 'large, loose, baggy monster' of a novel, the narrator of *Mill* stresses, 'I hope that there is

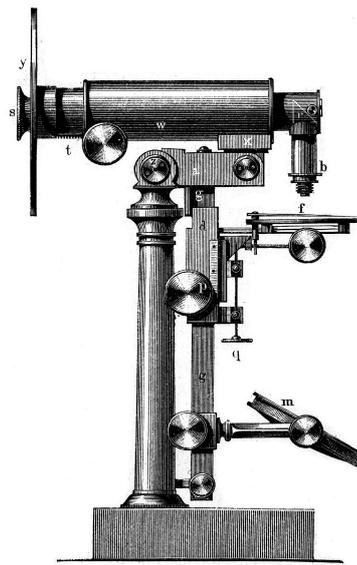


Figure 1. The horizontal microscope of Chevalier (makers of microscopes and optical instruments). Described in Chevalier, C., *Des microscopes et leur usages, Paris 1839*. Type first made in 1834. *Das Mikroskop Pieter Harting* Published: 1866 Wellcome Library London.

<<http://wellcomeimages.org>>

<sup>4</sup> George Eliot, *The Mill on the Floss*, ed. by Gordon Sherman Haight (Oxford: Oxford University Press, 2008), p. 363.

<sup>5</sup> Eliot, *Mill*, p. 363.

<sup>6</sup> Bradford A. Booth, review of *The George Eliot Letters*, by Gordon S. Haight, *Nineteenth-Century Fiction*, Vol. 9, No. 3 (December 1954), 223–227.

nothing that is seen to be irrelevant to my design'.<sup>7</sup> This is analogous to the microscopist who, unsure of what he is seeing, must learn to separate the relevant from the irrelevant, carefully teasing out the implications of their drawings and observations. The narrator of *Middlemarch* echoes Eliot's sentiment with an even more analogous metaphor, saying that her interpreting light must not be 'dispersed over that tempting range of relevancies called the universe', but restricted to a single sample.<sup>8</sup> Here, the narrator draws comparisons between the town of Middlemarch and a web, saying that her own enterprise is to 'unravel' the lives of its inhabitants and 'see how they were woven and interwoven'.<sup>9</sup> Thus, unlike other authors we have come to think of as 'realist' such as Dickens and Hardy, Eliot's narrator does not attempt to conceal the fact that the novel is a mediated, textual, multi-layered thing. Rather, she undercuts the authority of the 'author,' reflexively drawing attention to her narrative aims and outlining the methodology of her 'study of provincial life'. This would suggest that, rather than trying to conceal the work behind the creation of fiction, she is opening up the possibility that the narrator is not, in fact, omniscient, but rather merely a curious, privileged observer – much like a scientist with a microscope.

## 2: 'WHAT WAS THE PRIMITIVE TISSUE?'<sup>10</sup> – MIDDLEMARCH AS ORGANISM

The image of Middlemarch town as a web, which seems to weave itself into being as the narrator introduces more and more of its facets, is borne out by the fact that *Middlemarch* was originally divided into eight books and published as a serial. These divisions work as subheadings, isolating distinct narrative strands for clarity, while the book titles themselves emphasise the close relationships through which each of these strands influence – and in turn are influenced by – each other. For Eliot, no member of human society has an independent existence, their fates are entwined in a complex system of interdependencies. Thus, while Book Two, *Old and Young*, ostensibly refers to Mr. Casaubon and Dorothea Brooke's budding relationship, the title also recalls the fraught relations between Will Ladislaw and Mr. Casaubon, Fred Vincy and Mr. Featherstone, Dr Lydgate and Reverend Bulstrode. Similarly, the three romance plots that document the troublesome relationships between Dorothea and Casaubon, Lydgate and Rosamond, and Fred and Mary, although entirely distinct, are bracketed together under the chapter title 'Three Love Problems'. In Middlemarch, the younger generation are dependent of their elders for guidance, financial aid, vocational training and permission to marry. Thus, the disparate characters that populate Middlemarch, although some of them never meet, are all inextricably entwined in a complex system of alliances, dependencies and influences. Recalling the anatomy of an organic system, these narrative threads are simultaneously distinct and interdependent. All are vital

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<sup>7</sup> Henry James, *The Art of the Novel* (Scribner, 1962), p. 87.

<sup>8</sup> Eliot, *Middlemarch*, p. 133 (chapter 2).

<sup>9</sup> Eliot, *Middlemarch*, p. 133 (chapter 2).

<sup>10</sup> Eliot, *Middlemarch*, p. 119 (chapter 2).

constituents of a larger whole, bound by the cellular walls of Middlemarch county. Just as Dr Lydgate believes that there is an anatomical ‘primitive tissue’ that unites the organs, the narrative threads of *Middlemarch* – and the colliding atoms that are its characters – together constitute the whole.<sup>11</sup>

Dr Lydgate, a newcomer to Middlemarch, shares the narrator’s deep curiosity for untangling the intricacies of observed reality, and descriptions of his scientific methods are often cited as being an exposition of Eliot’s own narrative ones.<sup>12</sup> As the narrator tells us, Lydgate ‘longed to demonstrate the more intimate relations of living structure, and help to define men’s thought more accurately after the true order’.<sup>13</sup> His preferred illuminating instrument is the microscope, and, as well as his duties as local doctor, ‘he count[s] on quiet intervals to be watchfully seized, for taking up the threads of investigation—on many hints to be won from diligent application, not only of the scalpel, but of the microscope, which research had begun to use again with new enthusiasm of reliance’.<sup>14</sup> However, while Lydgate uses the microscope to analyse the minutiae of the processes determining the function of an organ, and from there, generalise towards a more complete conception of its function within the body, the narrator’s voice mediates between the systolic experience of Middlemarch’s individual inhabitants and the diastolic expansion of focus to incorporate the horizon of the entire nation. Indeed, the narrator too does the work of what Lydgate describes as ‘the very eye of research, provisionally framing its object and correcting it to more and more exactness of relation’.<sup>15</sup>

Like Lydgate with his microscope, the narrator has the super-human ability to enter into the intimate consciousnesses of her characters, but – perhaps unlike Lydgate – he also has the benefit of hindsight and the ability to take in the scope of the whole social, historical, and national medium in which the characters exist. For instance, when the narrator observes that, ‘[w]hile Lydgate, safely married and with the Hospital under his command, felt himself struggling for Medical Reform against Middlemarch, Middlemarch was becoming more and more conscious of the national struggle for another kind of Reform’, she is shifting her gaze from specific (Lydgate’s marriage), to the general (1832 Reform Act).<sup>16</sup> That Lydgate, ‘felt himself struggling’, is something that could only be deduced from inside his consciousness, so, for that moment, the narrator is inhabiting Lydgate’s private experience. However, the second half of the clause – although it mirrors the first half linguistically with the chiasmic repetition of ‘struggle’ and ‘Middlemarch’ – takes a new, macro, almost god-like perspective. Given

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<sup>11</sup> Eliot, *Middlemarch*, p. 201 (chapter 3), p. 119 (chapter 2).

<sup>12</sup> Critics such as Beer, Shuttleworth, and Levine, argue convincingly that the narrator of *Middlemarch* evokes the authority of objective scientific analysis in order to give the impression of accuracy in her study of provincial life.

<sup>13</sup> Eliot, *Middlemarch*, p. 119 (chapter 2).

<sup>14</sup> Eliot, *Middlemarch*, p. 119 (chapter 2).

<sup>15</sup> Eliot, *Middlemarch*, p. 132 (chapter 2).

<sup>16</sup> Eliot, *Middlemarch*, p. 368 (chapter 5).

that *Middlemarch* is set in 1829, the reference to the 1832 reforms is something only a narrator writing, or a reader reading could possibly know. Thus, despite her stated aim of limiting her study to the sphere of a small Midlands community, Eliot's narrator briefly widens her scope to take in 'the tempting range of relevancies called the universe' and judges their effects on her area of study.<sup>17</sup>

Eliot states in an 1868 letter that she hopes her fiction will imaginatively instil in her readers 'a clearer conception and a more active admiration of those vital elements which bind men together and give a higher worthiness to their existence'.<sup>18</sup> The narrator's gaze has the microscopic quality of being able to enter into the specificity of individual feeling, while also incorporating a wide breadth of general knowledge. This knowledge serves to inform her observations and allows her to analyse them in terms of the medium in which the individual exists. For example, Lydgate's science is aided and transformed by the popular use of the microscope, yet his hopes for medical reform are hindered by Middlemarch's attachment to its familiar traditions and conservative worldview. As such, the reader is made aware of how each individual's development is both transformed and hindered by the macrocosms of county and nation. Lydgate struggles for reform against the 'threadlike conditions' that make up Middlemarch's social web, while Middlemarch itself wants to swallow him up – like a white blood cell engulfing a foreign body – and remake him according to its own preconceptions.<sup>19</sup> As the narrator notes, 'there is no creature who is so strong that it is not greatly determined by what lies outside it', and she heavily emphasises the extent to which the fates of her characters are inextricably entwined like atoms within an organism.<sup>20</sup>

### 3: 'SIGNS ARE SMALL, MEASURABLE THINGS, INTERPRETATIONS ARE ILLIMITABLE'<sup>21</sup>

While there is much insight to be drawn from unpicking the many scientific analogies and metaphors in *Middlemarch*, what is often unacknowledged in the critical conception of the narrator-as-scientist is that Lydgate's scientific endeavours are unsuccessful. Indeed, Lydgate's scientific mind leads him astray when he attempts to apply empirical logic to the problem of romantic relationships. As he discovers, the evidence he had gathered regarding Rosamond's superior qualities and temperament – based on the external signs such as her beauty and poise – bear no relation to the reality of her character. By the novel's close, his plans for a new research hospital have been thwarted by entanglements with provincial politics, his finances are crippled by marriage, and his reputation is tarnished by his associative ties with Bulstrode. However, it is not just adverse social conditions that contribute to the thwarting of his ambitions. Lydgate's

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<sup>17</sup> Eliot, *Middlemarch*, p. 113 (chapter 5).

<sup>18</sup> Sally Shuttleworth, *George Eliot and Nineteenth-Century Science: The Make-Believe of a Beginning* (Cambridge University Press, 1984), p. 170.

<sup>19</sup> Eliot, *Middlemarch*, p. 123 (chapter 2).

<sup>20</sup> Eliot, *Middlemarch*, p. 673 (chapter 8).

<sup>21</sup> Eliot, *Middlemarch*, p. 17 (chapter 3).

research question, '[w]hat was the primitive tissue?', the narrator tells us, is phrased 'not quite in the way required by the awaiting answer'.<sup>22</sup> Here, the narrator is suggesting that it is not enough for the scientist to simply observe. Interpretation forms a necessary link between what the scientist perceives and what he comes to believe, and this can lead to false conclusions.

In her letters, Eliot suggests that science, with its commitment to detached investigation, might enhance theoretical understanding, but that only art 'makes us better able to imagine and to feel the pains and joys' of our fellow beings.<sup>23</sup> This notion of a type of knowledge that exists beyond what can be captured by observation is crucial to *Middlemarch*. In the end, the artist and activist Will Ladislaw achieves what the theoretically-minded Lydgate cannot, as his sensitivity and openness to new experience means that he can enter 'into every one's feelings' and 'take the pressure of their thought instead of urging his own with iron resistance'.<sup>24</sup> In contrast to Lydgate's futile attempts to gather evidence to support a pre-meditated conclusion (i.e. that there exists a 'primitive tissue'), Ladislaw welcomes the profusion, vagaries and uncertainty that life provides. The narrator reports that, unlike Lydgate and Casaubon, '[Ladislaw] [...] should prefer not to know the sources of the Nile, and that there should be some unknown regions preserved as hunting grounds for the poetic imagination.'<sup>25</sup>

For Eliot, knowledge beyond interpretation requires 'new organs' of perception. In the moment of Dorothea's emergence into maturity, the narrator says:

She might have compared her experience at that moment to the vague, alarmed consciousness that her life was taking on a new form that she was undergoing a metamorphosis in which memory would not adjust itself to the stirring of new organs. Everything was changing its aspect [...] Her world was in a state of convulsive change; the only thing she could say distinctly to herself was, that she must wait and think anew.<sup>26</sup>

The idea of the 'poetic imagination' being a new 'organ' of perception is repeated within the plot of *Middlemarch*, as it is only by 'thinking anew' and allowing herself to imaginatively enter into Rosamond's position that Dorothea manages to transcend of the distorting, singular perspective of her own viewpoint and overcome the myopia of her youth. The morning after her 'dark night of the soul' after she discovers Ladislaw in Rosamond's sitting room, Dorothea undergoes an interpretative shift as she asks herself 'was she alone in that scene? Was it her event only?'<sup>27</sup> Having emerged from her myopic egotism, she can no longer 'hide her eyes in selfish complaining' and resolves to

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<sup>22</sup> Eliot, *Middlemarch*, p. 119 (chapter 2).

<sup>23</sup> Booth, p. 111.

<sup>24</sup> Eliot, *Middlemarch*, p. 399 (chapter 5).

<sup>25</sup> Eliot, *Middlemarch*, pp. 62–63 (chapter 1).

<sup>26</sup> Eliot, *Middlemarch*, p. 394 (chapter 5).

<sup>27</sup> Eliot, *Middlemarch*, p. 394 (chapter 5).

take action on behalf of Lydgate and Rosamond's failing marriage.<sup>28</sup> This widening of her vision compels her to go out into the world to assure Rosamond of Lydgate's innocence. In the end, it is Dorothea's ability to soften, and extend her gaze beyond the microscopic circle of her own experience, that allows her to touch the people around her and affect change.

## CONCLUSION

This article has shown that the diffusive flexibility in the narrator's multi-perspectival, multi-disciplinary mode of interpretation is what facilitates the privileged viewpoint of Eliot's narrator. As Ladislav asserts as he looks at Dorothea standing among the religious iconography of Rome, 'the true seeing is within'.<sup>29</sup> By observing with humility, and by refusing to impose a singular interpretation onto the 'signs' of the observed, Eliot's narrator, even as she embodies many of the characteristics of a scientist, remains receptive to the 'illimitability' of interpretation and her fiction and – by precluding the possibility of seeing from a single perspective – demands that her readers do the same.

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<sup>28</sup> Eliot, *Middlemarch*, p. 634 (chapter 8).

<sup>29</sup> Eliot, *Middlemarch*, p. 154 (chapter 2).

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